

## **ABSTRACT**

This invention is related to heteroatom containing diamondoids (i.e., “heterodiamondoids”) which are compounds having a diamondoid nucleus in which one or more of the diamondoid nucleus carbons has been substitutionally replaced with a noncarbon atom. These heteroatom substituents impart desirable properties to the diamondoid. In addition, the heterodiamondoids are functionalized affording compounds carrying one or more functional groups covalently pendant therefrom. This invention is further related to polymerizable functionalized heterodiamondoids. In a preferred aspect of this invention the diamondoid nuclei are triamantane and higher diamondoid nuclei. In another preferred aspect, the heteroatoms are selected to give rise to diamondoid materials which can serve as n- and p-type materials in electronic devices can serve as optically active materials.